PROPOSED

PERMIT APPLICATION REVIEW
TEMPORARY COVERED SOURCE PERMIT NO. 0603-01-CT
Application for Renewal No. 0603-04

Company: E. M. Rivera & Sons, Inc.

Mailing Address: P.O. Box 9031
Kailua-Kona, Hawaii 96745

Facility: Portable Crushing Plants

Location: Various Temporary Sites, State of Hawaii

SIC Code: 1429 (Crushed and Broken Stone, Not Elsewhere Classified)

Responsible Official: Mr. Hiram Rivera
President
(808) 325-5057

Contact: CFM Environmental LLC
95-109 Waikalani Drive
Mililani, Hawaii 96789

Equipment: The facility encompasses the following equipment and associated appurtenances.

Facility Equipment				
Equipment	Manufacturer	Model No.	Serial No.	Manuf. Date
730 TPH Primary Jaw Crusher	Pioneer	4248	4248-96	1994
503 hp Diesel Engine	Caterpillar	3408	67U-16687	1994
505 TPH Primary Jaw Crusher	Terex/Cedarapids	Cobratrack 1100	53224	2005
300 hp Diesel Engine	Cummins	QSL-9	46426239	2005
1,005 TPH Secondary Cone Crusher	Telsmith	56021	63404	1966
475 hp Diesel Engine Generator	Caterpillar	3406CDITA	4JK00154	2003
Water Spray Systems				
Various Conveyors				

BACKGROUND

E. M. Rivera & Sons has submitted an application to renew its temporary covered source permit. There are no proposed changes to existing equipment in the design or operation of the facility.

The 1,005 TPH secondary crushing plant, powered by a 475 hp diesel engine generator, will only be operated as a secondary crusher with either of the permitted primary crushing plants. The primary and secondary crushing plants will be connected by conveyors. The operating hours of the crushers and diesel engines will be limited to 2,080 hours in any rolling twelve-month (12-month) period. Fugitive emissions will be controlled by water sprays. Stockpiles and plant area will be controlled by an existing water truck.

APPLICABLE REQUIREMENTS

Hawaii Administrative Rules (HAR)
Title 11 Chapter 59, Ambient Air Quality Standards
Title 11 Chapter 60.1, Air Pollution Control
- Subchapter 1, General Requirements
- Subchapter 2, General Prohibitions
  - 11-60.1-31, Applicability
  - 11-60.1-32, Visible Emissions
  - 11-60.1-33, Fugitive Dust
  - 11-60.1-38, Sulfur Oxides from Fuel Combustion
- Subchapter 5, Covered Sources
- Subchapter 6, Fees for Covered Sources, Noncovered Sources, and Agricultural Burning
  - 11-60.1-111, Definitions
  - 11-60.1-112, General Fee Provisions for Covered sources
  - 11-60.1-113, Application Fees for Covered sources
  - 11-60.1-114, Annual Fees for Covered sources
  - 11-60.1-115, Basis of Annual Fees for Covered Sources
- Subchapter 8, Standards of Performance for Stationary Sources
  - 11-60.1-161, New Source Performance Standards
- Subchapter 9, Hazardous Air Pollutant Sources
- Subchapter 10, Field Citations

Standard of Performance for New Stationary Sources (NSPS), 40 CFR Part 60
Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants is applicable to the 730 TPH and 505 TPH crushing plants because the maximum capacity of each crusher is greater than 150 tons/hour, and the plants were manufactured after August 31, 1983.

Subpart OOO is not applicable to the 1,005 TPH crushing plant (manufactured in 1966) because the plant was manufactured before August 31, 1983.

Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines is not applicable to the diesel engines because the engines are considered nonroad engines as defined in 40 CFR §1068.30. Subpart IIII applies to stationary internal combustion engines that are not nonroad engines.

National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61
This source is not subject to NESHAP as there are no standards in 40 CFR Part 61 applicable to this facility.

National Emission Standards for Hazardous Air Pollutants for Source Categories (NESHAP) (Maximum Achievable Control Technology (MACT)), 40 CFR Part 63
Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) is not applicable to the diesel engines because the engines are considered nonroad engines as defined in 40 CFR §1068.30. Subpart ZZZZ applies to stationary internal combustion engines that are not nonroad engines.

Prevention of Significant Deterioration (PSD), 40 CFR Part 52, §52.21
This source is not subject to PSD requirements because it is not a major stationary source as defined in 40 CFR §52.21 and HAR Title 11, Chapter 60.1, Subchapter 7.

Compliance Assurance Monitoring (CAM), 40 CFR 64
This source is not subject to CAM because the facility is not a major source. The purpose of CAM is to provide a reasonable assurance that compliance is being achieved with large emissions units that rely on air pollution control device equipment to meet an emissions limit or standard. Pursuant to 40 Code of Federal Regulations, Part 64, for CAM to be applicable, the emissions unit must: (1) be located at a major source; (2) be subject to an emissions limit or standard; (3) use a control device to achieve compliance; (4) have potential pre-control emissions that are 100% of the major source level; and (5) not otherwise be exempt from CAM.

Consolidated Emissions Reporting Rule (CERR), 40 CFR Part 51, Subpart A
CERR is not applicable because emissions from the facility do not exceed CERR triggering levels.

DOH In-house Annual Emissions Reporting
The Clean Air Branch requests annual emissions reporting from those facilities that have facility wide emissions exceeding in-house reporting levels and for all covered sources. Annual emissions reporting will be required because this facility is a covered source.

Best Available Control Technology (BACT)
This source is not subject to BACT analysis because this is an existing source with no proposed modifications. BACT analysis is required for new sources or modifications to sources that have the potential to emit or increase emissions above significant levels considering any limitations as defined in HAR, §11-60.1-1.

Synthetic Minor Source
A synthetic minor source is a facility that is potentially major, as defined in HAR, §11-60.1-1, but is made non-major through federally enforceable permit conditions. This facility is a synthetic minor source because potential emissions for NO_X and PM exceed major source thresholds when the facility is operated without limitations for 8,760 hours/year.

Greenhouse Gas Tailoring Rule
Title V or PSD permitting for greenhouse gas (GHG) emissions is not applicable to this facility because the potential to emit of CO_2 equivalent (CO_2e) emissions is less than 100,000 tons per year. Under the Tailoring Rule, in no event are sources with the potential to emit less than 100,000 tons per year CO_2e subject to PSD or Title V permitting for GHG emissions before

2016. Total GHG emissions on a CO_2e basis using the global warming potential (GWP) of each GHG are determined in the table below.

GHG	GWP	GHG Mass-Based Emissions (TPY)	CO_2e Based Emissions (TPY)
Carbon Dioxide (CO_2)	1	1556	1556
Total Emissions:			1556

INSIGNIFICANT ACTIVITIES / EXEMPTIONS

Storage Tanks
The following storage tank is less than 40,000 gallons and is considered an insignificant activity in accordance with HAR §11-60.1-82(f)(1):

1. 500 gallon fuel oil no. 2 storage tank.

ALTERNATIVE OPERATING SCENARIOS

Diesel Engines and Diesel Engine Generator
The permittee may replace each diesel engine or diesel engine generator with a temporary replacement unit of similar size with equal or lesser emissions if any repair reasonably warrants the removal of the diesel engine or diesel engine generator from its site (i.e., equipment failure, engine overhaul, or any major equipment problems requiring maintenance for efficient operation).

AIR POLLUTION CONTROLS

The crushing plants are equipped with water spay systems to control fugitive dust. Water trucks/water sprays will be used as necessary to minimize fugitive dust from plant operations, material transfer points, stockpiles, and plant roads.

PROJECT EMISSIONS

The operating hours of the crushing plants and diesel engines will be limited to 2,080 hours in any rolling 12-month period. The 1,005 TPH secondary cone crusher will only by operated with either primary crushers. The maximum emission occur when operated with the 730 TPH crusher.

730 TPH Primary Jaw Crusher with 1,005 TPH Secondary Cone Crusher
The maximum capacity of the primary crusher was used to calculate emissions. The secondary cone crusher will limited in production by the primary jaw crusher. Water sprays will be used to control PM emissions. Emissions were based on emission factors from AP-42 Section 11.19.2 (8/04) – Crushed Stone Processing and Pulverized Mineral Processing.

730 TPH Jaw Crusher with 1,005 TPH Cone Crusher		
Pollutant	Emissions (TPY) [2,080 hr/yr]	Emissions (TPY) [8,760 hr/yr]
PM	2.5	10.5
PM-10	1.0	4.4
PM-2.5	0.2	0.9

503 hp Caterpillar Diesel Engine

The 503 hp diesel engine is fired on fuel oil no. 2 with a maximum sulfur content not to exceed 0.5% by weight. Emissions were based on emission factors from AP-42 Section 3.3 (10/96) – Gasoline and Diesel Industrial Engines. The mass balance method was used to determine SO_2 emissions.

503 hp Caterpillar Diesel Engine			
Pollutant	Emissions (lb/hr)	Emissions (TPY) [2,080 hr/yr]	Emissions (TPY) [8,760 hr/yr]
CO	3.48	3.62	15.26
NO_X	16.18	16.82	70.85
SO_2	1.86	1.93	8.14
PM	1.14	1.18	4.98
PM-10	1.14	1.18	4.98
PM-2.5	1.14	1.18	4.98
TOC	1.32	1.37	5.78
HAPs	0.014	0.014	0.061

475 hp Caterpillar Diesel Engine Generator

The 475 hp diesel engine generator is fired on fuel oil no. 2 with a maximum sulfur content not to exceed 0.5% by weight. Emissions were based on manufacturer's data. The mass balance method was used to determine SO_2 emissions. HAP emissions were based on emission factors from AP-42 Section 3.3 (10/96) – Gasoline and Diesel Industrial Engines.

475 hp Caterpillar Diesel Engine Generator			
Pollutant	Emissions (lb/hr)	Emissions (TPY) [2,080 hr/yr]	Emissions (TPY) [8,760 hr/yr]
CO	4.62	4.80	20.24
NO_X	9.42	9.80	41.26
SO_2	1.72	1.78	7.52
PM	1.34	1.39	5.87
PM-10	1.34	1.39	5.87
PM-2.5	1.34	1.39	5.87
TOC	0.15	0.16	0.66
HAPs	0.013	0.013	0.056

505 TPH Primary Jaw Crusher

The maximum capacity of the crusher was used to calculate emissions. Water sprays will be used to control PM emissions. Emissions were based on emission factors from AP-42 Section 11.19.2 (8/04) – Crushed Stone Processing and Pulverized Mineral Processing.

505 TPH Jaw Crusher		
Pollutant	Emissions (TPY) [2,080 hr/yr]	Emissions (TPY) [8,760 hr/yr]
PM	0.9	4.0
PM-10	0.4	1.6
PM-2.5	0.1	0.4

300 hp Cummins Diesel Engine Generator

The 300 hp diesel engine is fired on fuel oil no. 2 with a maximum sulfur content not to exceed 0.5% by weight. Emissions were based on manufacturer's data. The mass balance method was used to determine SO_2 emissions. HAP emissions were based on emission factors from AP-42 Section 3.3 (10/96) – Gasoline and Diesel Industrial Engines.

300 hp Cummins Diesel Engine			
Pollutant	Emissions (lb/hr)	Emissions (TPY) [2,080 hr/yr]	Emissions (TPY) [8,760 hr/yr]
CO	0.94	0.98	4.11
NO_X	2.81	2.93	12.33
SO_2	1.05	1.09	4.58
PM	0.08	0.08	0.35
PM-10	0.08	0.08	0.35
PM-2.5	0.08	0.08	0.35
TOC	0.74	0.77	3.26
HAPs	0.008	0.008	0.034

Storage Piles

The maximum capacities of the 730 TPH and 505 TPH crushing plants were used to calculate emissions. A 70% control efficiency was assumed for water suppression to control fugitive dust. Emissions were based on emission factors from AP-42 Section 13.2.4 (11/06) - Aggregate Handling and Storage Piles.

Storage Piles		
Pollutant	Emissions (TPY) [2,080 hr/yr]	Emissions (TPY) [8,760 hr/yr]
PM	10.9	46.0
PM-10	5.2	21.8
PM-2.5	0.8	3.3

Vehicle Travel on Unpaved Roads

The maximum capacities of the 730 TPH and 505 TPH crushing plants were used to calculate emissions. A 70% control efficiency was assumed for water suppression to control fugitive dust. Emissions were based on emission factors from AP-42 Section 13.2.2 (11/06) - Unpaved Roads.

Vehicle Travel on Unpaved Roads		
Pollutant	Emissions (TPY) [2,080 hr/yr]	Emissions (TPY) [8,760 hr/yr]
PM	14.4	60.4
PM-10	3.5	14.8
PM-2.5	0.4	1.5

Total Emissions

Total facility emissions are summarized in the table below.

Total Facility Emissions and Trigger Levels (TPY)					
Pollutant	Emissions (Limited)	Emissions (No Limits 8,760 hr/yr)	BACT Significant Level	CERR Triggering Level (Type A sources / Type B sources)	DOH Level
CO	9.4	39.6	100	2,500 / 1000	250
NO_X	29.5	124.4	40	2,500 / 100	25
SO_2	4.8	20.2	40	2,500 / 100	25
PM	31.4	132.1	25	-	25
PM-10	12.8	53.8	15	250 / 100	25
PM-2.5	4.1	17.2	-	250 / 100	-
VOC	2.3	9.7	40	250 / 100	25
HAPs	0.04	0.15	-	-	5

AIR QUALITY ASSESSMENT

An ambient air quality impact analysis (AAQIA) is generally required for new or modified sources to demonstrate compliance with State and National ambient air quality standards. An ambient air quality impact analysis is not required for this permit renewal because there are no modifications proposed.

SIGNIFICANT PERMIT CONDITIONS

1. Operating Hour Limits

    a. The total operating hours of 730 TPH Portable Crushing Plant, as represented by the total operating hours of the 503 HP diesel engine, shall not exceed 2,080 hours in any rolling twelve-month (12-month) period.
    b. The total operating hours of 505 TPH Portable Crushing Plant, as represented by the total operating hours of the 300 HP diesel engine, shall not exceed 2,080 hours in any rolling twelve-month (12-month) period.
    c. The total operating hours of 1,005 TPH Portable Crushing Plant, as represented by the total operating hours of the 475 HP diesel engine generator, shall not exceed 2,080 hours in any rolling twelve-month (12-month) period.

2. Crushing Plants

    a. The 1,005 TPH Portable Crushing Plant shall only be operated as a secondary crushing plant with either of the primary 730 TPH Portable Crushing Plant or 505 TPH Portable Crushing Plant.
    b. The crushing plants shall be configured and operated with all incoming materials being processed through the 730 TPH Portable Crushing Plant and 505 TPH Portable Crushing Plant.

3. The diesel engines and diesel engine generator shall be fired only on fuel oil no. 2 with a maximum sulfur content not to exceed 0.5% by weight.

4. The permittee shall not cause to be discharged into the atmosphere from the crushers of the 730 TPH Portable Crushing Plant and 505 TPH Portable Crushing Plant, fugitive emissions which exhibit greater than fifteen (15) percent opacity.

5. The permittee shall not cause to be discharged into the atmosphere from any transfer point on the belt conveyors or from any other affected facility of 730 TPH Portable Crushing Plant and 505 TPH Portable Crushing Plant, fugitive emissions which exhibit greater than ten (10) percent opacity.

CONCLUSION

There are no proposed changes in this permit renewal. Water sprays will be used to control fugitive emissions. Potential emissions were based on the maximum rated capacities of the equipment. Recommend issuance of the temporary covered source permit subject to the incorporation of the significant permit conditions, 30-day public comment period, and 45-day Environmental Protection Agency review period.

Mark Saewong
September 15, 2011